

Attorney Docket No. 1273-004

PATENT APPLICATIONS
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Sir:

Transmitted herewith for filing is the patent application of:

Inventor: Ronald D. Green

For: AEROSOL SOLVENT WELD CEMENT, DISPENSING SYSTEM AND
METHOD OF JOINING PLASTIC PIPE

Enclosed are:

- ☒ 2 sheets of drawings.
- ☒ A declaration and power of attorney.
- ☒ Verified Statement Claiming Small Entity Status - Individual.

The filing fee has been calculated as shown below:

- ☒ SMALL ENTITY
- ☐ LARGE ENTITY

Basic Fee \$385.00

Total Claims

Number Over 20 (if <20= 12 x 11 132.00

Independent Claims

Number Over 3 (if >3= 1 x 40 40.00

Total Filing Fee \$557.00

☒ A check in the amount of \$557.00 to cover the filing fee is enclosed.

☒ Please charge Deposit Account No. 19-4076 any filing fees not covered by the enclosed check or credit any overpayments. Triplicate copies of this sheet is enclosed.

August 27, 1997
Date/

Roger A. Gilcrest
Roger A. Gilcrest, Reg. No. 31,954
Attorney for Applicant

Express Mail Number: EM436962987US

Date of Deposit: August 28, 1997

APPLICATION FOR UNITED STATES LETTERS PATENT

for

**AEROSOL SOLVENT WELD CEMENT, DISPENSING SYSTEM AND METHOD
OF JOINING PLASTIC PIPE**

Inventor: Ronald D. Green

Attorneys: Standley & Gilcrest
Attn.: Roger A. Gilcrest
495 Metro Place South, Suite 210
Dublin, Ohio 43017-5315
Telephone: (614) 792-5555
Facsimile: (614) 792-5536

08920600-082897

AEROSOL SOLVENT WELD CEMENT, DISPENSING SYSTEM AND METHOD OF JOINING PLASTIC PIPE

Inventor: Ronald D. Green

Background Of The Invention

The present invention is directed to an aerosol Solvent Weld Cement "SWC", a dispensing system and a method of joining plastic pipe.

Plastic pipe has become increasingly used in a wide variety of applications, such as in water transmission networks, residential plumbing, and even in the construction of a wide variety of structures bearing no relation to water transmission.

Plastic pipe continues to replace ceramic and metal pipe in a variety of applications owing to its reduced weight, lower cost, and resistance to cracking under stress.

Plastic pipe, such as PVC pipe, has the advantage of being capable of forming water tight junctions through the use of SWCs, while ceramic pipe relies primarily on interference fittings and metal pipe on welded joints. The use of SWCs allows the plastic pipe to be joined by relatively unskilled workers as compared to the use of welding or soldering equipment in metal pipes.

However, in the laying of such water pipe underground, pipe sections are joined through the use of SWCs. For example, within the confines of a 7 to 10 foot (2 to 3 meter) deep trench box, however, the conditions are far from ideal. Application of SWCs typically has involve application of liquid SWCs which are messy. Moreover, in such applications, the pipe installer has no convenient location where the open SWC container can be placed. The SWC container typically is placed alongside the top of the trench. The SWC container may be knocked or kicked over, resulting in loss of SWC, contamination of the soil with hazardous substances, and attendant loss of time and productivity. The SWC may also be contaminated, typically by dirt, debris or water at the work site, which can adversely affect the efficacy of the SWC.

Liquid solvent weld cement (SWC) are typically applied by use of a brush, and therefore do not provide the optimum uniformity of application. Liquid SWC often do not provide an optimally even coating of an effective amount of SWC, and sometimes cause waste and attendant mess through liquid run-off.

Also, liquid SWC typically does not allow the installer enough time to properly align the plastic pipe pieces because the cement sets up in only a few seconds, and produces a bond that cannot be altered. Accordingly, it is desirable to be able to apply SWC to plastic pipe in such a way that set-up time is extended to better allow the installer enough time to properly align the plastic pipe pieces, and be assured that the joint is properly completed.

In view of the foregoing it will be appreciated that there has existed and remains a need for improvements in the known methods for solvent welding pipe. Such improvements, if proving fast, safe, and reliable, would be well-received by contractors and workers alike, and would represent an important advancement to the construction industries.

Some of the practical advantages provided by the present invention include providing a neat and reliable SWC that can provide uniform application to the desired surface, and which resists contamination and oxidation.

Another advantage of the present invention includes providing a method of applying SWC for joining plastic pipe that allows the installer to quickly apply an effective amount of the SWC, while be afforded enough set-up time to properly align and complete the joint between two plastic pipe pieces. Still another benefit of the present invention is that it allows the installer to apply SWC for joining plastic pipe using only one hand instead of the two-hand method of using a can and brush dispenser.

In view of the present disclosure or through practice of the present invention, other advantages and the solution to other problems may become apparent.

Summary of the Invention

The present invention includes an aerosol SWC composition for adhering plastic pipe, and a method of using same.

The aerosol SWC composition and the method of use may be applied to weld a variety of plastic pipe in a wide array of applications. For instance, the present invention can be applied in interior and exterior plumbing (both commercial and residential), in water supply, communication pipe, drainage, waste ventilation and underground water and waste water systems, as well as for irrigation or any other water conduit.

In general, the aerosol SWC composition of the present invention comprises: (a) at least one resin adapted to bond to the plastic pipe; (b) at least one solvent; and (c) at least one

propellant; wherein the composition is under a pressure greater than ambient atmospheric pressure.

The resin SWC's may be any resin or combination appropriate for welding the plastic of the pipe selected, and may be selected from the group consisting of chloropolyvinylchloride resins, polyvinylchloride resins, ABS resins and butyrate and acrylic resins. It is preferred that the resin content of the aerosol SWC composition be in the range of about 10% - 30% by weight of the aerosol SWC composition. For welding PVC pipe, it is preferred that the resin is a chloropolyvinylchloride resin, and that it be present in an amount of about 10% by weight of the aerosol SWC composition.

The solvent may be any appropriate solvent used in conjunction with the selected resin diethoxyethane, including those selected from the group consisting of tetrahydrofuran, acetone, diethoxyethane, N-methyl pyrrolidone, dibasicesters, alkylene carbonates, dimethyl formamide, ethylacetate, methylisobutyl ketone, methyl alcohol, cyclohexanone, and methylethylketone and mixtures thereof. Typically, the solvent(s) will be present in an amount in the range of from about 50% to about 80% by weight of the aerosol SWC composition. For application to PVC, it is preferred that the solvent be a mixture of about 40% by weight tetrahydrofuran, about 15% by weight acetone, about 10% by weight cyclohexanone, and about 5% by weight methylethylketone.

It is preferred that the aerosol SWC composition also contain a suspending agent which may be any of those known in the art, such as amorphous silica. The aerosol thus may be homogeneous or heterogeneous.

The propellant may be any appropriate propellant used in conjunction with the selected resin, and may be selected from the group consisting of dimethyl ether, isobutane, butane, propane, nitrogen, carbon dioxide, 1-difluoroethane, tetrafluoroethane and mixtures of any two or more of said propellants. In the case of PVC, it is preferred that the propellant be dimethyl ether, and that the dimethyl ether be present in an amount of between about 20 % by weight to about 35% by weight of the aerosol SWC composition, and most preferably about 30% by weight of the aerosol SWC composition.

The aerosol SWC composition of the present may be formulated and packaged in accordance with methods and steps known in the art.

The present invention also includes an aerosol SWC composition, as described herein in its many embodiments, in a container for welding plastic pipe. The composition is disposed in

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a container adapted to contain the pressurized aerosol SWC composition, and the container comprises an outlet and a valve to control the release of the pressurized aerosol SWC composition from the container. The container may be of any size and may be selected from any type adapted to contain the aerosol SWC composition under pressure. Such
5 containers may include aerosol canisters of the type known in the art, but not limited to, such as those made of tin-plated, unlined tin plated steel or aluminum.

The container preferably should have a 360 degree valve and that it be provided with an unrestricted actuator.

The present invention also includes a method of dispensing an aerosol SWC
10 composition using an aerosol container, as described herein. In broadest terms, the method comprises the steps of (a) obtaining a pressurized aerosol SWC composition of the present invention in a dispensing container, the composition being under a pressure greater than ambient atmospheric pressure; and (b) opening the valve of the container so as to cause the pressurized aerosol SWC composition to be released from said container.

15 The present invention also includes a method of welding two sections of plastic pipe at a junction by use of an aerosol SWC composition, said method comprising: (a) obtaining a pressurized aerosol SWC composition in accordance with the present invention in a dispensing container, said composition being under a pressure greater than ambient atmospheric pressure; said composition disposed in a container adapted to contain said pressurized aerosol SWC
20 composition, said container comprising an outlet and a valve to control the release of said pressurized aerosol SWC from said container; and (b) opening the valve so as to cause said pressurized aerosol SWC composition to be released from said container onto one or both of the two sections of pipe at the prospective location of the junction; and (c) adjoining the two sections of plastic pipe so as to form the junction by welding action.

25 The present invention also includes a system for enabling an installer to join two sections of plastic pipe at a junction, which comprises: (a) a pressurized aerosol SWC composition in a dispensing container, as described above; and (b) a holster adapted to be worn by an installer, said holster capable of carrying said dispensing container and adapted so that the dispensing container can be removed by the installer for use and placed back into the
30 holster.

Advantages of the present invention include the convenience of using a closed container in a field trench or other areas that are dirty and wet, which minimizes spillage and

contamination of the SWC. Another advantage is the convenience of spraying the SWC onto the pipe surfaces to be joined. A further advantage is the ability to be able to hold the container at any angle and still have the SWC spray from the container.

Still another advantage is that it has been found that sprayed aerosol SWC provide longer set-up times for the installer. In this regard, it has been found that the freshly sprayed SWC sets up in about 8 to 12 seconds in comparison to the 3 to 5 second set-up time typically experienced in brushed liquid applications. Although not limited to its theory, it is believed that the propellant evaporating from the freshly sprayed adhesive lowers the temperature on the surfaces to be bonded thereby extending the working time. The sprayed SWC also provides an even coating of an effective amount of SWC, eliminating much of the waste and mess associated with liquid applications.

The aerosol spray generally is less cumbersome and is lighter than the can and brush dispensers of the prior art.

Yet another advantage is a holster which carries the container and from, and into which, the container can be placed by the installer while in the trench. Thus, the container is always with the installer, yet the container does not impede the installers ability to work. Yet another advantage is the ability to readily weld pipes in a trench in the field, by being able to quickly applied an effective amount of an SWC to the desired joint area.

The invention, accordingly, comprises the composition, container, system and method possessing the construction, combination of elements, and arrangement of parts and steps which are exemplified in the following detailed description. Reference to that description and to the accompanying drawings should be used for a fuller understanding and appreciation of the nature and objects of the invention, although other objects may be obvious to those skilled in the art.

The following present preferred formulations for use with respective plastic pipe types:

ABS Pipe Cement

ABS Resin	10-40%
Methyl Ethyl Ketone	90-60%

PVC Pipe Cement

PVC Resin	10-30%
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	Tetra Hydrofuran	0-50%
	Diethoryethane	0-30%
	Cyclohexanone	0-15%
	Methyl Ethyl Ketone	30-60%
5	Acetone	0-10%

CPVC Pipe Cement

	PVC Resin	2-10%
	CPVC Resin	2-20%
10	Amorphous Silica	1-5%
	Tetrahydrofuran	0-50%
	Methyl Ethyl Ketone	10-40%
	Acetone	0-5%
	Diethoryethane	0-50%

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The preferred propellant for the above formations is dimethyl ether either present in the range of from about 10% to about 40%

Brief Description of the Drawings

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In accordance with the foregoing summary, the following presents a detailed description of embodiments of the invention presently considered to be the best mode.

For an entire understanding of the nature and objects of the invention, reference should be made to the following detailed description taken in connection with the accompanying drawings as follows:

25

Figure 1 is a perspective view of a trench wherein an installer is laying water pipe by joining pipe sections wherein provision is made to use the inventive SWC composition, method and system, in accordance with one embodiment of the present invention.

Figure 2 is an elevational perspective view of the novel aerosol SWC container disposed in the holster, in accordance with one embodiment of the present invention.

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Figure 3 is a cross-section of an aerosol container in accordance with one embodiment of the present invention.

The drawings will be described further in connection with the following Detailed Description of the Invention.

Detailed Description of the Invention

5 In accordance with the foregoing summary, the following presents a detailed description of embodiments of the invention presently considered to be the best mode.

The preferred propellant for the above formations is dimethyl ether either present in the range of from about 10% to about 40%.

Referring to the Figures wherein like parts are designated with like reference numerals, shown in Figure 1 generally at 10 is a trench dug in the field, in which water pipe is to be laid. Trench 10 typically is dug into the ground some 7 to 10 feet below elevation and in length suitable for the terrain and length of pipe sections being joined. In Figure 1, installer 12 is joining pipe sections 14 and 16. It will be observed that section 16 adjacent bell end 20. Spigot 22 of pipe section 14 is adapted in circumference to fit inside bell 18 in dimensional tolerance such that the resulting seal is water tight after welding.

15 In order to ensure that spigot 22 will readily mate with bell 20, SWC is applied. Heretofore, as described above, installer 12 would employ liquid SWC on the pipe with a brush, rag, or the like, dispensed from an open container which must be held by the installer during application of the SWC, and then set some place thereafter. Often, this open container is set at the mouth or edge of trench 10 where it is in danger of being knocked over or contaminated.

Rather than painting the liquid SWC on the pipe with a brush, rag, or the like, the present invention relies on a system that includes an aerosol SWC and optional holster arrangement. Specifically, Figure 2 depicts aerosol container carried by holster 26. Holster 26 conveniently can be made from leather, nylon fabric or similar durable material and is adapted with clip 28 which enables holster 26 to be clipped onto belt 30 or onto the top of pants 32 of installer 12. As shown in Figure 1, installer 12 can withdraw container 24 from holster 26 for actuating valve 34, thus releasing aerosolized SWC from within container 24 to weld spigot 22 and/or bell 20. Once the SWC has been applied, installer 12 can readily replace container 24 into holster 26 and proceed with the water pipe installation.

Referring to container 24, housed therewithin is an aerosol SWC composition in accordance with the present invention, as described herein. Container 24 sprays from all angles, typically empties completely, and functions at temperatures below 20°F.

While a container fitted with a valve for dispensing pressurized contents from within container 24 has been described, it will be appreciated that any conventional system for dispensing pressurized material from within a container may be employed in accordance with the precepts of the present invention. A conventional aerosol can with valve has been used to illustrate the present invention as such units are ubiquitous commercial products that enable cost effective and efficient packaging and dispensing of the aerosol SWC system disclosed herein. Other equivalent dispensing systems may be conceived of by the skilled artisan and are included within the precepts of the present invention.

Figure 3 shows a cross-section elevational view of an aerosol can in accordance with one embodiment of the present invention. Figure 3 shows aerosol container 24 and actuating valve 34. Aerosol container 24 contains the aerosol SWC composition 36 under pressure that allows it to issue as a spray 38 from the actuating valve when activated. The actuating valve may have a standard or tapered orifice, although a wide open actuator is preferred.

Aerosol container 24 may also have a liner 40 on its interior surface.

While the foregoing description has been made with reference to water pipe, it will be appreciated that the present invention may be used with a variety of other pipe known in the art. For example, plastic residential and commercial plumbing and sewer pipe, drain pipe, process piping used in factories and other manufacturing facilities, and the like. Thus, the present invention should not be construed in a limiting sense with respect to the particular piping involved. So long as plastic pipe requiring attachment by welding action is at hand, the present invention has applicability with particular advantage in welding pipe, particularly in outdoor applications, where spillage and contamination are problematic.

The efficacy of the SWC of the present invention may be ascertained using ASTM method number D 740-94.

It is anticipated that certain changes may be made in the present invention without departing from the precepts herein involved. Accordingly, it is intended that all matter contained in the foregoing description shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. An aerosol solvent weld cement composition for welding plastic pipe, said composition
5 comprising:

(a) at least one resin adapted bond to said plastic pipe;

(b) at least one solvent; and

(c) at least one propellant;

said composition being under a pressure greater than ambient atmospheric

10 pressure.

2. An aerosol solvent weld cement composition according to claim 1 wherein said at least
one resin is selected from the group consisting of chloropolyvinylchloride resins,
polyvinylchloride resins, ABS resins and butyrate and acrylic resins.

3. An aerosol solvent weld cement composition according to claim 1 wherein said at least
one resin comprises from about 10% to about 30% by weight of said aerosol solvent weld
cement composition.

4. An aerosol solvent weld cement composition according to claim 3 wherein said at least
one resin comprises chloropolyvinylchloride resin present in an amount of about 10% by weight
of said aerosol solvent weld cement composition.

5. An aerosol solvent weld cement composition according to claim 1 wherein said at least
one solvent is selected form the group consisting of tetrahydrofuran, acetone, diethoxyethane,
N-methyl pyrroidone, dibasicesters, alkylene carbonates, dimethyl formamide, ethylacetate,
methylisobutyl ketone, methyl alcolhol, cyclohexanone, and methylethylketone and mixtures
thereof.

6. An aerosol solvent weld cement composition according to claim 1 wherein said at least
one solvent comprises from about 50% to about 80% by weight of said aerosol solvent weld
cement composition.

7. An aerosol solvent weld cement composition according to claim 1 wherein said at least one solvent comprises about 40% by weight tetrahydrofuran, 15% by weight acetone, 10% by weight cyclohexanone, and 5% by weight methylethylketone.

5

8. An aerosol solvent weld cement composition according to claim 1 additionally comprising a suspending agent.

9. An aerosol solvent weld cement composition according to claim 8 wherein said
10 suspending agent is amorphous silica.

10. An aerosol solvent weld cement composition according to claim 1 wherein said at least one propellant comprises a substance selected from the group consisting of dimethyl ether, isobutane, butane, propane, nitrogen, carbon dioxide, 1-difluoroethane, tetrafluoroethane and
15 mixtures thereof.

11. An aerosol solvent weld cement composition according to claim 10 wherein said at least one propellant is dimethyl ether.

12. An aerosol solvent weld cement composition according to claim 11 wherein said at least one propellant is dimethyl ether and wherein said dimethyl ether is present in an amount of between about 20 % to about 35% by weight of said aerosol solvent weld cement composition.

13. An aerosol solvent weld cement composition according to claim 12 wherein said
25 dimethyl ether comprises about 30% of said aerosol solvent weld cement composition .

14. An aerosol solvent weld cement composition in a container for welding plastic pipe, said composition comprising:

- 30
- (a) at least one resin adapted to bond to said plastic pipe;
 - (b) at least one solvent; and
 - (c) at least one propellant;

said composition being under a pressure greater than ambient atmospheric pressure; and

said composition disposed in a container adapted to contain said pressurized aerosol solvent weld cement composition, said container comprising an outlet and a valve to control the release of said pressurized aerosol solvent weld cement from said container.

15. An aerosol solvent weld cement composition in a container according to claim 14 wherein said at least one resin is selected from the group consisting of chloropolyvinylchloride resins, polyvinylchloride resins, ABS resins and butyrate and acrylic resins.

16. An aerosol solvent weld cement composition in a container according to claim 14 wherein said at least one solvent is selected from the group consisting of tetrahydrofuran, acetone, diethoxyethane, N-methyl pyrrolidone, dibasicesters, alkylene carbonates, dimethyl formamide, ethylacetate, methylisobutyl ketone, methyl alcohol, cyclohexanone, and methylethylketone and mixtures thereof.

17. An aerosol solvent weld cement composition in a container according to claim 14 wherein said aerosol solvent weld cement composition additionally comprises a suspending agent.

18. An aerosol solvent weld cement composition in a container according to claim 14 wherein said at least one propellant is selected from the group consisting of dimethyl ether, isobutane, butane, propane, nitrogen, carbon dioxide, 1-difluoroethane, tetrafluoroethane and mixtures thereof.

19. An aerosol solvent weld cement composition in a container according to claim 14 wherein said container comprises a 360 degree valve.

20. An aerosol solvent weld cement composition in a container according to claim 14 wherein said container comprises an unrestricted actuator.

21. A method of dispensing an aerosol solvent weld cement composition, said method comprising:

(a) obtaining a pressurized aerosol solvent weld cement composition in a dispensing container, said composition comprising:

(1) at least one resin adapted to weld to said plastic pipe;

(2) at least one solvent; and

(3) at least one propellant;

said composition being under a pressure greater than ambient atmospheric pressure;

said composition disposed in a container adapted to contain said pressurized aerosol solvent weld cement composition, said container comprising an outlet and a valve to control the release of said pressurized aerosol solvent weld cement from said container; and

(b) opening said valve so as to cause said pressurized aerosol solvent weld cement composition to be released from said container.

22. A method according to claim 22 wherein said at least one resin is selected from the group consisting of chloropolyvinylchloride resins, polyvinylchloride resins, ABS resins and butyrate and acrylic resins.

23. A method according to claim 22 wherein said at least one solvent is selected from the group consisting of tetrahydrofuran, acetone, diethoxyethane, N-methyl pyrrolidone, dibasicesters, alkylene carbonates, dimethyl formamide, ethylacetate, methylisobutyl ketone, methyl alcohol, cyclohexanone, and methylethylketone and mixtures thereof.

24. A method according to claim 22 wherein said aerosol solvent weld cement composition additionally comprises a suspending agent.

25. A method according to claim 22 wherein said at least one propellant is selected from the group consisting of dimethyl ether, isobutane, butane, propane, nitrogen, carbon dioxide, 1-difluoroethane, tetrafluoroethane and mixtures of any two or more of said propellants.

26. A method according to claim 22 wherein said container comprises a 360 degree valve and a unrestricted actuator.

27. A method of welding two sections of plastic pipe at a junction by an aerosol solvent weld cement composition, said method comprising:

(a) obtaining a pressurized aerosol solvent weld cement composition in a dispensing container, said composition comprising:

(1) at least one resin adapted to weld to said plastic pipe;

(2) at least one solvent; and

(3) at least one propellant;

said composition being under a pressure greater than ambient atmospheric pressure;

said composition disposed in a container adapted to contain said pressurized aerosol solvent weld cement composition, said container comprising an outlet and a valve to control the release of said pressurized aerosol solvent weld cement from said container; and

(b) opening said valve so as to cause said pressurized aerosol solvent weld cement composition to be released from said container onto at least one of said two sections of pipe at the prospective location of said junction; and

(c) adjoining said two sections of plastic pipe so as to form said junction by welding action.

28. A method according to claim 29 wherein said at least one resin is selected from the group consisting of chloropolyvinylchloride resins, polyvinylchloride resins, ABS resins and butyrate and acrylic resins.

29. A method according to claim 29 wherein said at least one solvent is selected from the group consisting of tetrahydrofuran, acetone, diethoxyethane, N-methyl pyrrolidone, dibasicesters, alkylene carbonates, dimethyl formamide, ethylacetate, methylisobutyl ketone, methyl alcohol, cyclohexanone, and methylethylketone and mixtures thereof.

30. A method according to claim 29 wherein said aerosol composition additionally comprises a suspending agent.

31. A method according to claim 29 wherein said at least one propellant is selected from the group consisting of dimethyl ether, isobutane, butane, propane, nitrogen, carbon dioxide, 1-difluoroethane, tetrafluoroethane and mixtures of any two or more of said propellants.

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32. A method according to claim 29 wherein said container comprises a 360 degree valve and a unrestricted actuator.

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Abstract

The present invention includes an aerosol SWC composition for adhering plastic pipe, and a method of using same. The aerosol SWC composition and the method of use may be applied to weld a variety of plastic pipe in a wide array of applications. For instance, the present invention can be applied in interior and exterior plumbing (both commercial and residential), in water supply, communication pipe, drainage, waste ventilation and underground water and waste water systems, as well as for irrigation or any other water conduit. In general, the aerosol SWC composition of the present invention comprises: (a) at least one resin adapted to bond to the plastic pipe; (b) at least one solvent; and (c) at least one propellant; wherein the composition is under a pressure greater than ambient atmospheric pressure.

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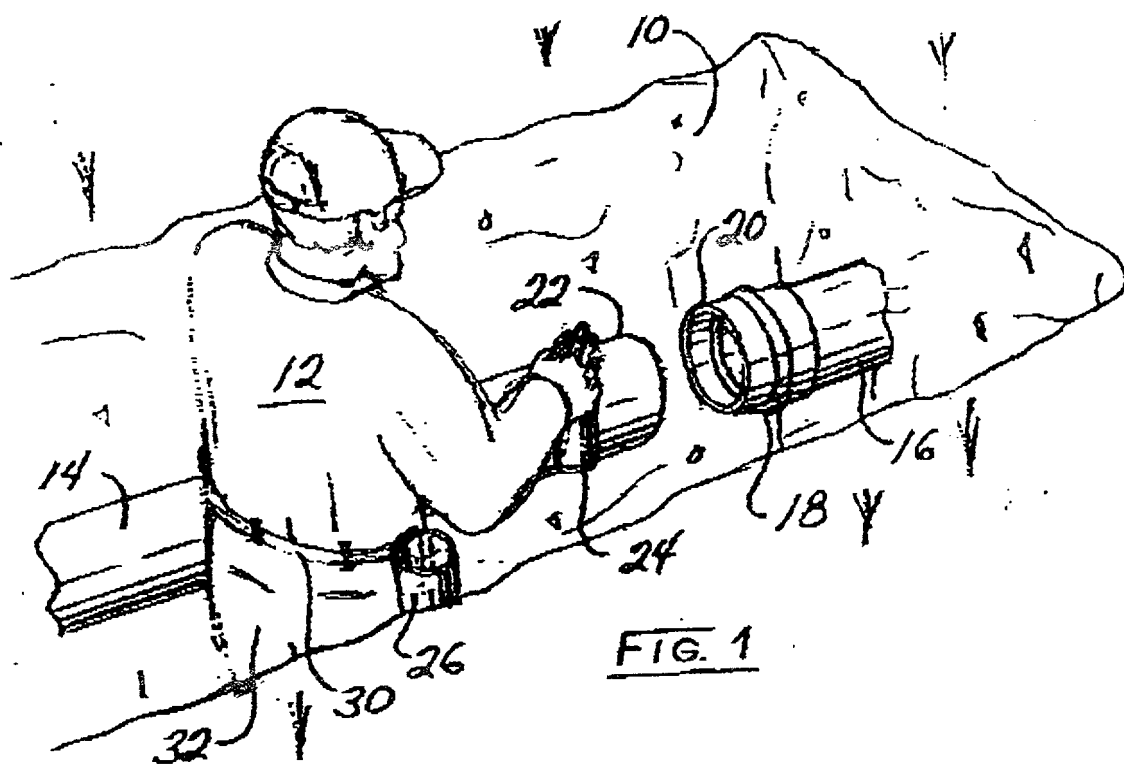
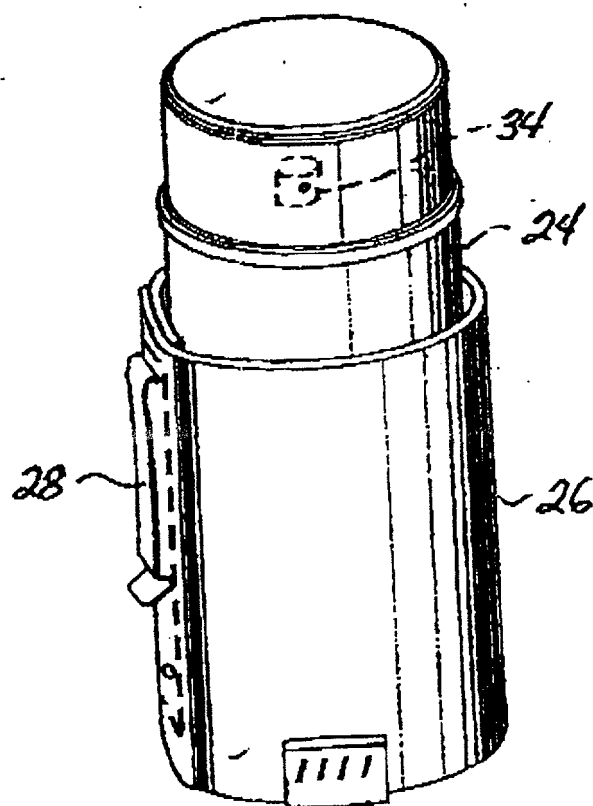


FIG. 2



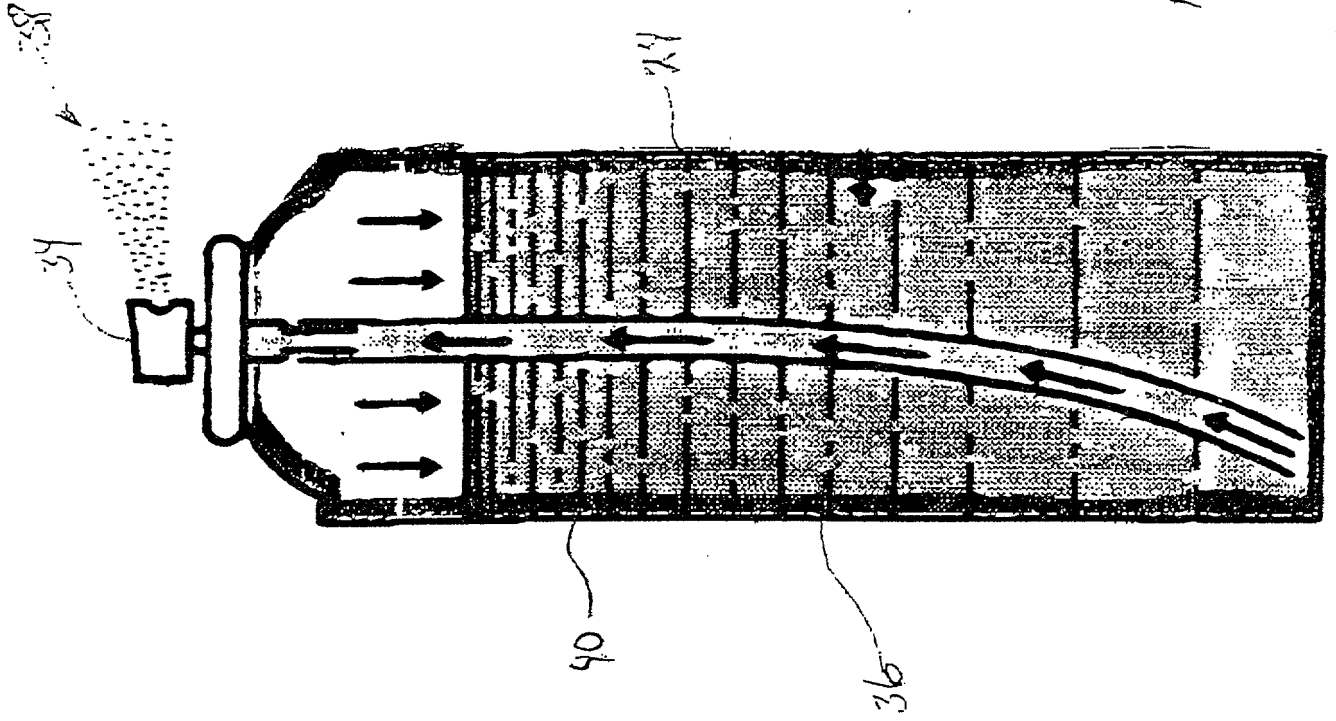


Figure 3

"Express Mail" Number: EM436962987US

Date of Deposit: August 28, 1997

Applicant: Ronald D. Green

Attorney's Docket No.: 1273-004

Serial No.: _____

Filed: August 28, 1997

For: AEROSOL SOLVENT WELD CEMENT, DISPENSING SYSTEM AND
METHOD OF JOINING PLASTIC PIPE

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.27(A)) - INDIVIDUAL**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled AEROSOL SOLVENT WELD CEMENT, DISPENSING SYSTEM AND METHOD OF JOINING PLASTIC PIPE by inventor, Ronald D. Green, described in:

☒ the specification filed herewith

☐ application Serial No. _____, filed _____

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the

earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Ronald Green

ADDRESS OF PERSON SIGNING 13595 Cable Road, Pataskala, Ohio 43062

SIGNATURE Ronald D Green

DATE 8/27/97

03520600-088897

DECLARATION
AND
POWER OF ATTORNEY

As below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention for an AEROSOL SOLVENT WELD CEMENT, DISPENSING SYSTEM AND METHOD OF JOINING PLASTIC PIPE the specification of which (check one):

☒ [X] is attached hereto.

☐ [] was filed on _____ as
Application Serial No. _____
and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of the invention claimed in this application, in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

			Priority <u>Claimed</u>	
<u>None</u>			<input type="checkbox"/> []	<input type="checkbox"/> []
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
<u> </u>	<u> </u>	<u> </u>	<input type="checkbox"/> []	<input type="checkbox"/> []
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulation, §1.56(a) and (b) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

None
(Application Serial No.) (Filing Date) (Status)(patented,pending abandoned)

I hereby appoint Roger A. Gilcrest, Reg. No. 31,954, James L. Kwak, Reg. No. 41,133, Donald O. Nickey, Reg. No. 29,092, Patricia L. Prior, Reg. No. 33,758, or Jeffrey S. Standley, Reg. No. 34,021, c/o Standley & Gilcrest, 495 Metro Place South, Suite 210, Dublin, Ohio 43017-5315, Telephone No. (614) 792-5555 my attorneys, with full power in each of them, of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith. All correspondence should be sent to the attention of **Roger A. Gilcrest** at the address above.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any patent issued thereon.

Full name of inventor

Ronald D Green
Ronald Green

Date

8/27/97

Residence Pataskala, Ohio

Citizenship United States of America

Post Office Address

13595 Cable Road, Pataskala, Ohio 43062